

IN THE CLAIMS

Please amend the claims as indicated below.

1. (canceled)

2. (currently amended) A switching mode power supply comprising:

a power supply unit including a main switch coupled to the primary coil of a transformer, the main switch performing a switching operation at a predetermined duty in a normal operation mode, the main switch carrying out no switching operation during a first period and performing the switching operation at a first duty for a second period in a standby mode to supply power to the secondary side of the transformer;

a mode setting unit for controlling a mode setting voltage coupled to the output voltage of the secondary side of the transformer to operate the main switch in the normal operation mode or standby mode;

a feedback circuit having a controlled current source whose current value varies with the mode setting voltage of the mode setting unit, and a first capacitor connected in parallel with the controlled current source; and

a switching controller for controlling the main switch to carry out the switching operation in the standby mode according to a feedback voltage from the feedback circuit, the quantity of current flowing through the switching controller in the normal operation mode being different from the quantity of current flowing through the switching controller in the standby mode ~~The switching mode power supply as claimed in claim 1,~~ wherein the switching controller comprises:

a switching driver for controlling the main switch to perform or stop the switching operation according to a switching control signal; and

a switching control signal generator for generating the switching control signal to control the main switch to carry out the switching operation at a predetermined duty according to feedback voltage charged in the first capacitor in the normal operation mode, and to control the main switch to repeat the switching on state and switching off state in the standby mode,

the switching control signal generator comprising:

a first diode whose anode is connected to the primary coil of the transformer;

a second capacitor connected between the cathode of the first diode and the ground;

a first resistor connected in parallel with the second capacitor;

a third capacitor connected between the first resistor and the ground; and

a first current source connected between the third capacitor and the ground, to make the quantity of current inputted to the switching driver in the normal operation mode different from the quantity of current flowing into the switching driver in the standby mode.

3. (original) The switching mode power supply as claimed in claim 2, wherein the switching driver detects the normal operation mode so as to control a predetermined quantity of current to flow through the first current source.

4. (currently amended) A switching mode power supply comprising:

a power supply unit including a main switch coupled to the primary coil of a transformer, the main switch performing a switching operation at a predetermined duty in a normal operation mode, the main switch carrying out no switching operation during a first period and performing the switching operation at a first duty for a second period in a standby mode to supply power to the secondary side of the transformer;

a mode setting unit for controlling a mode setting voltage coupled to the output voltage of the secondary side of the transformer to operate the main switch in the normal operation mode or standby mode;

a feedback circuit having a controlled current source whose current value varies with the mode setting voltage of the mode setting unit, and a first capacitor connected in parallel with the controlled current source; and

a switching controller for controlling the main switch to carry out the switching operation in the standby mode according to a feedback voltage from the feedback circuit, the quantity of current flowing through the switching controller in the normal operation mode being different from the quantity of current flowing through the switching controller in the standby mode ~~The switching mode power supply as claimed in claim 1, wherein the switching controller comprises:~~

a switching driver for controlling the main switch to perform or stop the switching operation according to a switching control signal;

a switching control signal generator for generating the switching control signal to control the main switch to carry out the switching operation at a predetermined duty according to feedback voltage charged in the first capacitor in the normal operation mode, and to control the main switch to repeat the switching on state and switching off state in the standby mode,

the switching control signal generator comprising:

a first diode whose anode is connected to the primary coil of the transformer;

a second capacitor connected between the cathode of the first diode and the ground;

a first resistor connected in parallel with the second capacitor;

a third capacitor connected between the first resistor and the ground; and

a zener diode connected between the third capacitor and the ground, to make the quantity of current inputted to the switching driver in the normal operation mode different from the quantity of current flowing into the switching driver in the standby mode.

5. (original) The switching mode power supply as claimed in claim 3, wherein the zener diode is turned on in the normal operation mode such that a predetermined quantity of current flows through the zener diode.

6-13. (canceled)

14. (currently amended) A method of operating a power supply unit, comprising:

providing a power supply unit including a main switch coupled to the primary coil of a transformer, the main switch performing a switching operation at a predetermined duty in a normal operation mode, the main switch carrying out no switching operation during a first period and performing the switching operation at a first duty for a second period in a standby mode to supply power to the secondary side of the transformer;

providing a mode setting unit for controlling a mode setting voltage coupled to the output voltage of the secondary side of the transformer to operate the main switch in the normal operation mode or standby mode;

providing a feedback circuit having a controlled current source whose current value varies with the mode setting voltage of the mode setting unit, and a first capacitor connected in parallel with the controlled current source; and

providing a switching controller for controlling the main switch to carry out the switching operation in the standby mode according to a feedback voltage from the feedback circuit, the quantity of current flowing through the switching controller in the normal operation mode being different from the quantity of current flowing through the switching controller in the standby mode, wherein the switching controller comprises:

a switching driver for controlling the main switch to perform or stop the switching operation according to a switching control signal; and

a switching control signal generator for generating the switching control signal to control the main switch to carry out the switching operation at a predetermined duty according to feedback voltage charged in the first capacitor in the normal operation mode, and to control the main switch to repeat the switching on state and switching off state in the standby mode,

the switching control signal generator comprising:

a first diode whose anode is connected to the primary coil of the transformer;

a second capacitor connected between the cathode of the first diode and the ground;

a first resistor connected in parallel with the second capacitor;

a third capacitor connected between the first resistor and the ground; and

a first current source connected between the third capacitor and the ground, to make the quantity of current inputted to the switching driver in the normal operation mode different from the quantity of current flowing into the switching driver in the standby mode

~~providing a power supply unit containing a main switch, a mode setting unit, and a feedback circuit;~~

~~performing a switching operation in a normal operation mode;~~

~~controlling a mode setting voltage by operating a main switch in a normal operation mode or in a standby mode;~~

~~controlling the current source of the feedback circuit;~~

~~varying the value of the feedback circuit with the mode setting voltage of the mode setting unit;~~

~~carrying out the switching operation using the feedback voltage that is charged in the normal operation mode; and~~

~~repeating a switching on state and switching off state in the standby mode.~~

15. (currently amended) The method of claim 14, further comprising:

providing the switching driver that detects the normal operation mode so as to control a predetermined quantity of current to flow through the first current source generating a switching control signal both to perform the switching operation according to a feedback voltage charged in the normal operation mode and to repeat the switching on state and switching off state in the standby mode;

performing or stopping the switching operation according to the switching control signal; and

wherein the amount of current flowing to the switching driver in the normal operation mode is different from the amount of current flowing into the switching driver in the standby mode.

16. (currently amended) The method of claim 15 14, further comprising turning on the zener diode in the normal operation mode such that a predetermined quantity of current flows through the zener diode ~~detecting the normal operation mode so as to control the quantity of current flowing through a current source.~~

17. (canceled)

18. (currently amended) A method for making a switching mode power supply, comprising:

providing a power supply unit including a main switch coupled to the primary coil of a transformer, the main switch performing a switching operation at a predetermined duty in a normal operation mode, the main switch carrying out no switching operation during a first period and performing the switching operation at a first duty for a second period in a standby mode to supply power to the secondary side of the transformer;

providing a mode setting unit for controlling a mode setting voltage coupled to the output voltage of the secondary side of the transformer to operate the main switch in the normal operation mode or standby mode;

providing a feedback circuit having a controlled current source whose current value varies with the mode setting voltage of the mode setting unit, and a first capacitor connected in parallel with the controlled current source; and

providing a switching controller for controlling the main switch to carry out the switching operation in the standby mode according to a feedback voltage from the

feedback circuit, the quantity of current flowing through the switching controller in the normal operation mode being different from the quantity of current flowing through the switching controller in the standby mode, wherein the switching controller comprises:

a switching driver for controlling the main switch to perform or stop the switching operation according to a switching control signal;

a switching control signal generator for generating the switching control signal to control the main switch to carry out the switching operation at a predetermined duty according to feedback voltage charged in the first capacitor in the normal operation mode, and to control the main switch to repeat the switching on state and switching off state in the standby mode,

the switching control signal generator comprising:

a first diode whose anode is connected to the primary coil of the transformer;

a second capacitor connected between the cathode of the first diode and the ground;

a first resistor connected in parallel with the second capacitor;

a third capacitor connected between the first resistor and the ground; and

a zener diode connected between the third capacitor and the ground, to make the quantity of current inputted to the switching driver in the normal operation mode different from the quantity of current flowing into the switching driver in the standby mode providing a power supply unit containing a main switch for performing a switching operation in a normal operation mode and a switching operation in a standby mode;

~~providing a mode setting unit for controlling a mode setting voltage that operates the main switch;~~

~~providing a feedback circuit having a controlled current source whose current varies with the mode setting voltage; and~~

~~providing a switching controller for controlling the switching operation in the standby mode according to a feedback voltage from the feedback circuit.~~

19. (canceled)

20. (currently amended) A system containing a switching mode power supply, the switching mode power supply, comprising:

a power supply unit including a main switch coupled to the primary coil of a transformer, the main switch performing a switching operation at a predetermined duty in

a normal operation mode, the main switch carrying out no switching operation during a first period and performing the switching operation at a first duty for a second period in a standby mode to supply power to the secondary side of the transformer;

a mode setting unit for controlling a mode setting voltage coupled to the output voltage of the secondary side of the transformer to operate the main switch in the normal operation mode or standby mode;

a feedback circuit having a controlled current source whose current value varies with the mode setting voltage of the mode setting unit, and a first capacitor connected in parallel with the controlled current source; and

a switching controller for controlling the main switch to carry out the switching operation in the standby mode according to a feedback voltage from the feedback circuit, the quantity of current flowing through the switching controller in the normal operation mode being different from the quantity of current flowing through the switching controller in the standby mode, wherein the switching controller comprises:

a switching driver for controlling the main switch to perform or stop the switching operation according to a switching control signal; and

a switching control signal generator for generating the switching control signal to control the main switch to carry out the switching operation at a predetermined duty according to feedback voltage charged in the first capacitor in the normal operation mode, and to control the main switch to repeat the switching on state and switching off state in the standby mode,

the switching control signal generator comprising:

a first diode whose anode is connected to the primary coil of the transformer;

a second capacitor connected between the cathode of the first diode and the ground;

a first resistor connected in parallel with the second capacitor;

a third capacitor connected between the first resistor and the ground; and

a first current source connected between the third capacitor and the ground, to make the quantity of current inputted to the switching driver in the normal operation mode different from the quantity of current flowing into the switching driver in the standby mode
~~a power supply unit containing a main switch for performing a switching operation in a normal operation mode and a switching operation in a standby mode;~~

~~a mode setting unit for controlling a mode setting voltage that operates the main switch;~~

~~a feedback circuit having a controlled current source whose current varies with the mode setting voltage; and~~

~~a switching controller for controlling the switching operation in the standby mode according to a feedback voltage from the feedback circuit.~~

21. (currently amended) The system of claim 20 21, wherein the switching driver detects the normal operation mode so as to control a predetermined quantity of current to flow through the first current source wherein the quantity of current flowing through the switching controller in the normal operation mode being different from the quantity of current flowing through the switching controller in the standby mode.

22. (currently amended) An electronic apparatus containing a switching mode power supply, the switching mode power supply, comprising:

a power supply unit including a main switch coupled to the primary coil of a transformer, the main switch performing a switching operation at a predetermined duty in a normal operation mode, the main switch carrying out no switching operation during a first period and performing the switching operation at a first duty for a second period in a standby mode to supply power to the secondary side of the transformer;

a mode setting unit for controlling a mode setting voltage coupled to the output voltage of the secondary side of the transformer to operate the main switch in the normal operation mode or standby mode;

a feedback circuit having a controlled current source whose current value varies with the mode setting voltage of the mode setting unit, and a first capacitor connected in parallel with the controlled current source; and

a switching controller for controlling the main switch to carry out the switching operation in the standby mode according to a feedback voltage from the feedback circuit, the quantity of current flowing through the switching controller in the normal operation mode being different from the quantity of current flowing through the switching controller in the standby mode, wherein the switching controller comprises:

a switching driver for controlling the main switch to perform or stop the switching operation according to a switching control signal;

a switching control signal generator for generating the switching control signal to control the main switch to carry out the switching operation at a predetermined duty according to feedback voltage charged in the first capacitor in the normal operation mode, and to control the main switch to repeat the switching on state and switching off state in the standby mode,

the switching control signal generator comprising:

a first diode whose anode is connected to the primary coil of the transformer;

a second capacitor connected between the cathode of the first diode and the ground;

a first resistor connected in parallel with the second capacitor;

a third capacitor connected between the first resistor and the ground; and

a zener diode connected between the third capacitor and the ground, to make the quantity of current inputted to the switching driver in the normal operation mode different from the quantity of current flowing into the switching driver in the standby mode

~~a power supply unit containing a main switch for performing a switching operation in a normal operation mode and a switching operation in a standby mode;~~

~~a mode setting unit for controlling a mode setting voltage that operates the main switch;~~

~~a feedback circuit having a controlled current source whose current varies with the mode setting voltage; and~~

~~a switching controller for controlling the switching operation in the standby mode according to a feedback voltage from the feedback circuit.~~

23. (currently amended) The apparatus of claim 22, ~~wherein the quantity of current flowing through the switching controller in the normal operation mode being different from the quantity of current flowing through the switching controller in the standby mode~~ wherein the zener diode is turned on in the normal operation mode such that a predetermined quantity of current flows through the zener diode.

24. (currently amended) The power supply of claim ~~[[6]]~~ 2, wherein the switching controller contains driver that operates continually during the standby mode.

25. (currently amended) The method of claim 18, wherein the switching ~~controller~~
~~contains a driver that~~ operates continually during the standby mode.

26. (currently amended) The system of claim 20, wherein the switching ~~controller~~
~~contains a driver that~~ operates continually during the standby mode.

27. (currently amended) The apparatus of claim 22, wherein the switching ~~controller~~
~~contains a driver that~~ operates continually during the standby mode.

28. (currently amended) The power supply of claim 2[[6]], wherein the voltage from
the feedback circuit is always more than zero during the standby mode.

29. (previously presented) The method of claim 18, wherein the voltage from the
feedback circuit is always more than zero during the standby mode.

30. (previously presented) The system of claim 20, wherein the voltage from the
feedback circuit is always more than zero during the standby mode.

31. (previously presented) The apparatus of claim 22, wherein the voltage from the
feedback circuit is always more than zero during the standby mode.

32. (new) The power supply of claim 4, wherein the switching driver operates
continually during the standby mode.

33. (new) The method of claim 14, wherein the switching driver operates continually
during the standby mode.

34. (new) The power supply of claim 4, wherein the voltage from the feedback
circuit is always more than zero during the standby mode.

35. (new) The system of claim 14, wherein the voltage from the feedback circuit is
always more than zero during the standby mode.